

# IMF Working Paper

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## Benefits of Compliance with Securities Listing Standards: Evidence from the Depository Receipt Market

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**IMF Working Paper**

Monetary and Exchange Affairs Department

**Benefits of Compliance with Securities Listing Standards:  
Evidence from the Depository Receipt Market**

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**Abstract**

<p>The views expressed in this Working Paper are those of the author(s) and do not necessarily represent those of the IMF or IMF policy. Working Papers describe research in progress by the author(s) and are published to elicit comments and to further debate.</p>
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The paper finds that costs of implementing stringent securities listing standards may exceed benefits. Depository receipts, a growing source of international equity financing, differ in types by the reporting and disclosure standards issuing firms are required to meet. For lower levels of compliance, results show that factors associated with the stage of economic development of the issuing firm's country account for the lower levels of capital raised. Incurring reporting costs to comply with higher standards may thus be inefficient. In contrast, firms choosing to meet higher reporting and disclosure standards do so because the information revealed would have a positive effect on capital raised.

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Contents	Page
I. Introduction .....	3
II. The Depository Receipt Market .....	4
III. ADR Market Trends .....	7
IV. Data and Empirical Methodology.....	10
V. Empirical Results .....	12
VI. Conclusion and Further Issues.....	15
References.....	18
Text Tables	
Table 1. Number of ADR Placements by Type and Country of Origin of Issuing Firms .....	10
Table 2. Empirical Results .....	13
Figures	
1. Number of ADR Programs .....	8
2. Number of New Capital Raising Offerings .....	8
3. Cumulative New Private Placements.....	9
4. Cumulative New Public Placements.....	9
5. Number of ICs Issuing New ADRs by Type .....	9
6. Number of DCs Issuing New ADRs by Type.....	9
7. Capital Raised by Type of Country .....	9
8. Average Capital Raised by Placement Type .....	9
9. Total Capital Raised by Placement Type.....	9

## I. INTRODUCTION

The Asian crisis, the ensuing reversal of capital inflows, and the contagion effects to other countries have been some of the driving forces behind the international consensus to strengthen the international financial system. One of the main objectives behind efforts in this area is to avoid contagion effects that may result from the lack of adequate information to discriminate between emerging market countries and companies. As a result, minimum standards in many areas are being developed to enable investors to be better informed and to strengthen the international financial system.<sup>2</sup> There is also a debate on ways to disseminate standards and to foster their implementation. One of the key factors in fostering standards implementation is the existence of significant market incentives for implementation.

This paper contributes to the research on the issue of market incentives by examining the significance of securities listing standards for amounts of equity capital raised in the depository receipt market.<sup>3</sup> Depository Receipts (DRs), a way for companies to raise equity capital internationally, provide a unique opportunity to analyze the relative importance of accounting, reporting, and disclosure standards associated with securities listing. This is because types of DRs differ mainly by the degree of compliance of the issuing firm with listing standards. Since both industrial and developing countries issue DRs, the data on ADRs also allows to uncover differences between developed and developing countries regarding the benefit of compliance with stringent disclosure requirements.<sup>4</sup>

One of the key conventions in interpreting financial statements is the “cost-benefit convention” which argues that benefits of receiving accounting information should exceed the cost of providing it. In line with this convention, a country should decide to impose stringent accounting and disclosure standards on its firms only if compliance translates into more access to international capital markets at a premium that offsets compliance costs. Indeed, a firm might issue financial statements consistent with United States Accounting Standards and gain nothing if the economic system that generated those financial statements

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<sup>2</sup> These standards include the special data dissemination standard of the International Monetary Fund (IMF), minimum standards for securities markets regulation of the International Organization of Securities Commissions (IOSCO), international standards of the International Accounting Standards Committee (IAS), etc...

<sup>3</sup> For the remainder of the paper, the term “listing standard” will be used to mean the accounting, reporting, and disclosure standards associated with public placements of securities and securities listing.

<sup>4</sup> More than 50 percent of international equity capital raised by developing countries in the 1990s, on average, has been through DRs. This figure reached 72 percent in 1999 (Source: Capital Data Ltd).

was not transparent to investors and if other country specific reform priorities have not been undertaken first.

The paper is organized as follows: Section II explains what depository receipts are and the different types that exist. Section III shows market trends of the different depository receipt types. Differences in market trends between industrialized and developing countries are also illustrated. Section IV presents the empirical methodology used to analyze the effect of the degree of standards compliance on levels of equity capital raised and differences between types of countries.

## **II. THE DEPOSITORY RECEIPT MARKET**

Depository Receipts (DRs) are negotiable certificates that certify ownership of a company's publicly traded equity or debt. The underlying equity or debt instruments are deposited at a local bank in the issuing firm's country of residence. The company is the depositor and the local bank the custodian of the instruments. The DRs are issued by the depository trust (usually an authorized sponsor) in the foreign country (e.g., the United States-U.S.). Usually, the DRs can be converted into a direct holding of the underlying security. The DRs are denominated in US\$ and dividends are also paid in US\$ but only after conversion at the prevailing spot exchange rate and after payments of all required taxes. Currency risk and country related risks are therefore still present. Clearing and settlement are done through the depository trust in the foreign country and allow to reduce transactions costs that may be high for an individual investor. DR issuers provide DR investors with information that must be, at the minimum, the information required to be given to investors in the underlying equity or debt security in the issuing firms' country of residence.

Since the sponsor acts as an intermediary for the investors, DRs allow foreign investors to avoid dealing directly with an unfamiliar market place, confusing tax regulations, and the poor information flow that may exist in other countries. DRs also facilitate foreign ownership of domestic securities where local regulation restricts such ownership. They also allow institutional investors that may be prohibited from investing in foreign currency denominated assets to invest in foreign securities indirectly. DRs can be traded in an organized stock exchange such as the NYSE, interdealer quotation systems such as NASDAQ, or Over-The-Counter (OTC) markets depending on their type.

There are different types of DRs. American Depository Receipts (ADRs) issued and traded in the U.S, and Global Depository Receipts (GDRs) issued to U.S. and non-U.S. investors and traded outside the U.S. Four types of ADRs can be distinguished: Levels I, II, and III, and the so-called Rule 144A ADRs.

Both Level I and II ADRs are created using existing company securities and do not involve raising new capital. Level I ADRs are mostly traded in the U.S. OTC market and companies issuing them do not have to comply with U.S. Generally Accepted Accounting Standards (GAAP) and disclosure requirements of the Securities and Exchange Commission (SEC). Companies are only required to comply with reporting and disclosure requirements of

their country of origin. The list of those requirements is provided to the SEC. It includes communications and reports that are deemed material to an investment decision and given to the holders of the underlying securities in the homecountry. The list is updated as the homecountry reporting rules change.

The basic advantage of a Level I ADR is that it allows initial visibility of a company's share in the U.S. market. The company obtains this visibility without the need to change its reporting framework to meet U.S. requirements which can be burdensome (Joyle, 2000, p. 159). The liquidity of Level I ADRs is however limited because of the lack of exchange listing.

Companies can have their ADRs listed in exchanges such as the NASDAQ or NYSE by issuing Level II ADRs. Listing offers more visibility and liquidity. The initial listing fee can, however, be substantial (over US\$1 million). Firms must comply with U.S. GAAP, issue quarterly reports, meet SEC disclosure requirements and other requirements of the exchange where they trade (Box 1 provides a brief list of listing standards associated with Level II ADRs). Because of these more stringent requirements with reporting costs that can be expensive, Level I DRs are the fastest growing segment of the Depository Receipt business.

Firms wishing to issue new equity capital can do so in public or private offerings. For public offerings, companies issue Level III ADRs and can trade in the NASDAQ, AMEX, or NYSE. The company is required to meet full SEC disclosure requirements, comply with U.S. GAAP, provide quarterly reports, and meet requirements of the listing exchange. The reporting rules are therefore the same as in Level II. Since 1990, companies can also raise new equity capital through private placements under the so-called Rule 144A Depository Receipts (RADRs). The RADRs are not listed on organized exchanges or interdealer quotation systems such as the NASDAQ and cannot be resold before a 2-year holding period has lapsed, unless an exemption is given.<sup>5</sup> The exemption is essentially meant to ensure that only sophisticated investors trade securities of firms that meet less stringent reporting requirements. This helps protect individual small investors.

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<sup>5</sup> Exemption is given to Qualified Institutional Buyers (QIBs) defined as institutions managing at least \$100 million in securities, brokers/dealers owning and investing at least \$10 million in securities of nonaffiliates, or banks and savings and loans with at least \$25 million net worth.

### Box 1: Selected Reporting Rules for Foreign Companies Listed on U.S. Exchanges

Foreign companies issuing ADRs can be exempted from SEC registration and reporting requirements of Section 12 of the 1934 SEC act under rule 12g3-2(b) of the act. If a firm's securities have traded without SEC registration exemption within the last 18 months, exemption is not possible. Without registration exemption, the information that needs to be provided to meet SEC reporting rules are substantial and include the following:

**Information in Prospectus:** Description of risk factors that make an offering high risk; Description of the intended use of the proceeds; Information on factors considered in the determination of the offering price; Management's discussion and analysis of financial condition and results of operations. Detailed explanation of corporate management.

**Description of business:** Company to describe business during the last 5 years, including its subsidiaries; Description to include the principal products produced and services rendered and the principal markets for and methods of distribution of such products and services. Disclosure also include the breakdown of total sales and revenues in the last 3 years by categories of activities and geographical markets (with sales of unaffiliated customers and sales transfer shown separately); Research and development policy including the estimated amount spent during each of the last three fiscal years; Special disclosures include a description of important economic developments in the firm's homecountry that may affect the issuer's business, including existing or probable government regulation; unusual competitive conditions in the industry, cyclicity of the industry, dependence on one or a few major customers or suppliers (raw material or financing), and anticipated raw material or energy shortages to the extent management may not be able to secure a continuing source of supply. Information on expiration of material labor contracts, patents, trademarks, licenses, franchises, concessions or royalty agreements;

**Control of Registrant:** As far as known to the registrant, state whether the registrant is directly or indirectly owned or controlled by another corporation(s) or foreign government and if so provide the name(s) of such controlling bodies.

**Exchange Controls and Other Limitations Affecting Securities Holders:** Description include any government laws, decrees, or regulations in the country in which the registrant is organized, that restrict the export or import of capital, including, but not limited to, foreign exchange controls, or that affect the remittance of dividends, interest or other payments to nonresident holders of the registrant's securities.

**Taxation:** Brief outline of all taxes, including withholdings provisions to which U.S. holders are subject to under existing laws and regulations of the foreign country. Include description of pertinent provisions of any reciprocal tax treaty between the U.S. and the foreign country.

**Directors and Officers of Registrant and their Compensation:** Provision of list of names of all executive officers, their term and the period during which they have served. Provision of aggregate amount of compensation paid to directors and officers without naming them.

**Financial Statements:** Furnish financial statements with content substantially similar to financial statements that comply with U.S. GAAP or provide a reconciliation. Financial statements to be filed no later than 6 months after the end of a fiscal year. Unaudited interim financial statements are also to be provided. Audit performed on financial statements should be conducted using U.S. auditing procedures and its concept of auditor independence unless exemption are provided for omission of certain procedures. Periodic reports include the disclosure of material information registrant is required to make public in its home jurisdiction.

**Other disclosures and prohibitions:** Owners of more than 5 percent stock must file a report detailing their background, identity, the purpose of the purchase and the origin of the funds used. Prohibition of gifts and payments to foreign officials, political parties, or public office candidates for the purpose of obtaining business advantage.

Source: U.S. SEC: Various reporting forms reproduced in Joyle (1995).

GDRs are essentially identical to ADRs in terms of operational, legal, technical, and administrative requirements. GDRs, listed in Europe, do not have different levels of classification and can be for existing or new issues of shares. Since the issuing firm complies with its homecountry reporting requirements, GDRs are the same as Level I ADRs when new capital is not raised. They are also the same as RADRs when new capital is raised in private placements in the U.S. In fact, under Regulation S, a company can issue DRs and simultaneously raise funds with GDRs in Europe (publicly or privately) and RADRs privately in the U.S. After funds are raised, GDRs and RADRs can essentially be called Level I ADRs. This is another reason why Level I ADRs are becoming increasingly popular. Companies can raise equity capital internationally and gain international visibility while continuing to comply with home country reporting, disclosures, and accounting standards.

Joyle (1995) notes that non-U.S. companies are reluctant to access the U.S. public market because of the extensive listing requirements. The costs are viewed as not worth the capital formation or commercial benefits and the potential for liability may be high.

### **III. ADR MARKET TRENDS<sup>6</sup>**

ADR programs have grown significantly from around 800 programs in 1990 to more than 1800 in 1998 (Figure 1). This has been the result of increases in both public and private placements for new capital (Figures 2 to 4) from both industrialized and developing countries (ICs and DCs). Private programs (unlisted) have however grown more than listed programs. This reflects to a larger extent the increase in the number of firms from DCs that enter the ADR market (Figures 5 and 6) with a preference for private programs. As was noted in section II, private placements only require compliance with homecountry reporting and disclosure rules which are usually less stringent than U.S. requirements. Industrialized country firms also issue an increasing number of ADRs but as can be seen from Figures 5 and 6, they do not have a clear preference for one type of placement in comparison to developing country firms. (See Table 1 for the list of countries with ADR programs in the U.S.).

Reflecting the increase in countries and ADR programs, capital raised in international equity markets using these instruments has increased significantly (Figure 7). The growth in equity capital raised in the 1990s using ADR programs has however been higher for developing countries firms as a group. In the early 1990s, it was mainly industrialized countries that issued ADRs. While developing countries have preferred private placements, the average capital raised per offering is much lower than in public offerings (Figure 8). The lower average capital raised per private offering is to be expected since public offerings reach a wider investor base and may be more attractive to investors because of the higher liquidity of the listed ADRs.

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<sup>6</sup> The data source of the figures below is the Bank of New York.

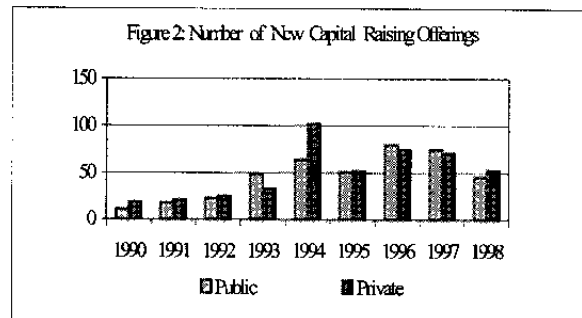
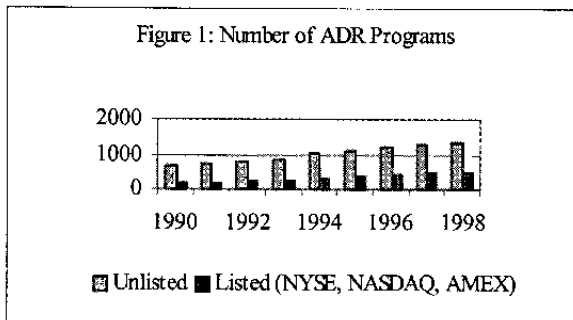


With this background, we now come back to the paper's main interest which is to determine whether firms that choose private placements also raise less funds because of a lower level of reporting and disclosure standard in their homecountry. The answer to this question is not obvious because settling for lower amounts of capital raised as is observed in the data may be due to factors beyond the control of the issuing company. This would be the case if the negative effect of those factors would not have been compensated if the firms had publicly placed ADRs and complied with higher U.S standards. These factors, as noted by FSF (2000), may be related to the "stage of economic development, level of institutional development, and other domestic factors" of the issuing firm's country. If this is the case, it would not be cost efficient for a country to adopt stringent reporting standards for its companies until other more important domestic deficiencies are remedied. It would also not be cost efficient for official incentives and technical assistance to be provided to that country for the implementation of more stringent standards.

Since firms from industrialized countries may be expected to have more stringent homecountry standards than developing countries, the impact of complying with homecountry standards may be different between firms from different countries. On that account, one would expect developing country firms issuing private placements to raise less funds than industrialized country firms.

It should be noted that the lack of adequate disclosure raises the cost of capital for a firm because of the risk premium investors would require. This risk premium in turn translates into lower prices for equity shares issued by the firm. This risk premium is in addition to other firm specific and country specific risk premia. The uniqueness of the ADR data is that it allows to isolate the relevance of accounting and disclosure standards from other factors for international equity capital inflows to a country. Thus, if the amount of equity capital raised by a country's firms is independent of the level of disclosure chosen, variables controlling for disclosure standards should not be significant empirically. It could then be that capital raised by a country's firms would depend, for instance, on investment opportunities in that country which a country specific variable would pick up.

The empirical methodology used to answer these questions is explained in Section IV.



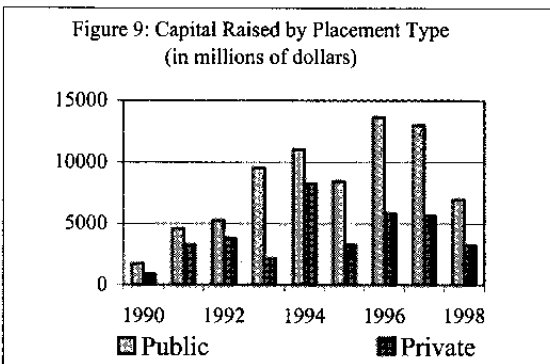
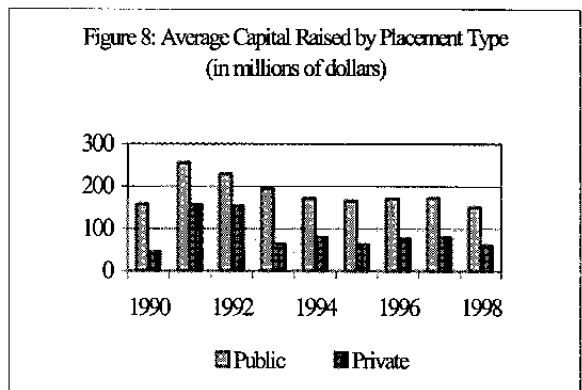
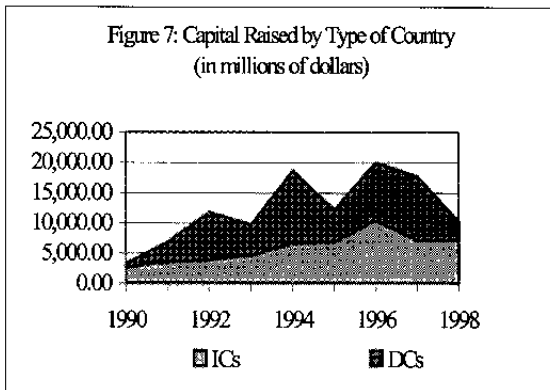
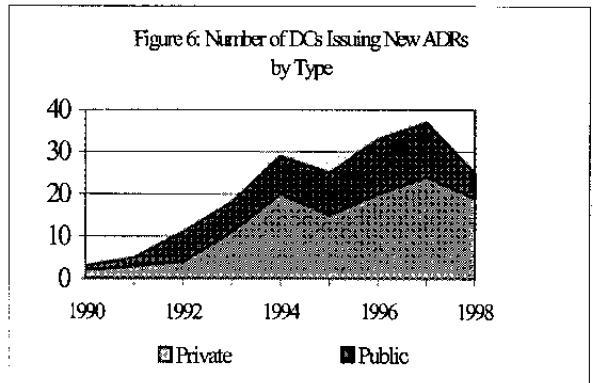
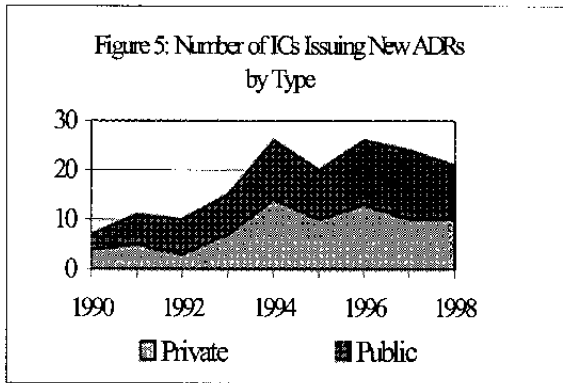
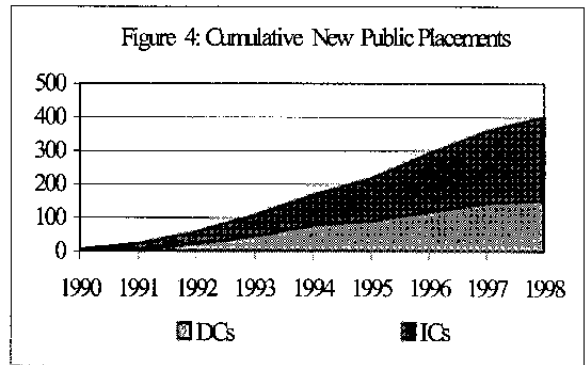
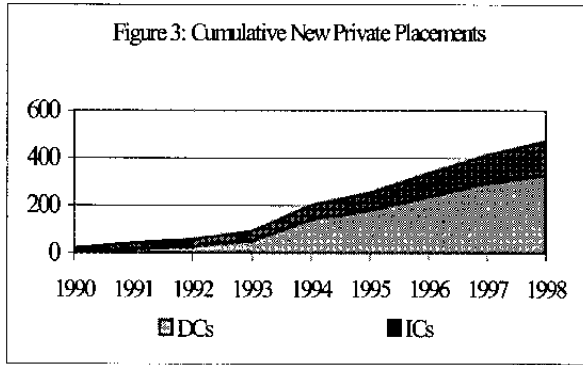


Table 1. Number of ADR Placements by Type and Country of Origin of Issuing Firms (1990-98)

	Total	Pub	Priv		Total	Pub	Priv		Total	Pub	Priv
Argentina	26	15	11	Hungary	18	1	17	Papua NG	2	1	1
Australia	19	13	6	India	67	2	65	Peru	5	3	2
Austria	4	0	4	Indonesia	7	5	2	Philippines	12	4	8
Bahrain	1	0	1	Ireland	25	23	2	Poland	12	0	12
Belgium	1	1	0	Israel	11	9	2	Portugal	8	4	4
Brazil	23	6	17	Italy	28	18	10	Romania	1	0	1
British VI	1	0	1	Japan	9	1	8	Russia	7	2	5
Chile	25	24	1	Jordan	1	0	1	Singapore	3	2	1
China	18	11	7	Kazakhstan	2	0	2	Slovakia	3	0	3
Columbia	8	1	7	Korea	39	9	30	Slovenia	1	0	1
Croatia	3	0	3	Latvia	2	0	2	South AFR	15	0	15
Czech Rep	4	0	4	Lebanon	7	0	7	Spain	17	15	2
Denmark	5	4	1	Lithuania	4	0	4	Sri Lanka	1	0	1
Dom. Rep	1	1	0	Luxembourg	12	3	9	Sweden	14	8	6
Egypt	6	0	6	Malawi	2	0	2	Switzerland	7	5	2
Estonia	1	0	1	Malta	1	0	1	Taiwan	33	6	27
Finland	11	4	7	Mexico	70	38	32	Thailand	2	1	1
France	41	28	13	Morocco	1	0	1	Tunisia	1	0	1
Germany	19	11	8	Netherlands	26	8	18	Turkey	13	0	13
Ghana	2	0	2	New Zealand	6	0	6	U.K	118	92	26
Greece	7	2	5	Norway	14	8	6	Uruguay	1	0	1
HongKong	8	7	1	Pakistan	3	0	3	Venezuela	9	5	4

Source: Bank of New York  
 Pub= Publicly placed ADRs  
 Priv= Privately placed ADRs

#### IV. DATA AND EMPIRICAL METHODOLOGY

The paper uses annual ADR data provided by the Bank of New York for the period 1990-1998. This data is the source data of Figures 1 to 9. The data provides the total amount of capital raised by foreign firms in the U.S. ADR market and their country of origin. For each country, the total amount of equity capital raised (Y) in a given year is calculated. The data also indicates whether the placements were private or public. This allows to distinguish public and private placements corresponding to more or less stringent reporting standards respectively ( $S^+$ ,  $S^-$ ). The information on the country of origin of the issuing firms is used to group countries by their stage of economic development and construct a dummy variable (D). (D) takes the value of 1 for developing countries and 0 otherwise. The five variables used in the study are therefore:

- Y = Total capital raised by a country's firms in a given year  
 N = The number of ADR programs issued by a country' firms in a given year  
 $S^-$  = The number of ADR programs privately placed by a country's firms  
 $S^+$  = The number of ADR programs publicly placed by a country's firms  
 D = A dummy variable equal to 1 for developing countries, 0 otherwise

With these variables the following panel data regression for the period 1990-1998 is run

$$(1) Y_{it} = \alpha_1 + \alpha_2 N_{it} + \alpha_3 S_{it}^- + \alpha_4 D * S_{it}^- + \alpha_5 D + v_{it}$$

Where  $i$  denotes countries and  $t$  the time period

Equation 1 indicates that the level of equity capital raised by a country's firms is a function of the number of ADR programs issued (N) and the number of private placements ( $S^-$ ). Note that since  $N_{it} = S_{it}^+ + S_{it}^-$ ,  $N_{it}$  and  $S_{it}^-$  will not be perfectly correlated in the panel and can be estimated with precision as will be seen in Table 2 (estimation 1) below. The dummy variable (D) interacting with ( $S^-$ ) allows to determine whether being from a developing country changes the marginal effect of lower standard compliance ( $S^-$ ) on the amount of equity capital raised (this is a slope effect). In other words, does it matter who is not complying with higher standards. For a developing country, the net effect of issuing more privately placed ADRs ( $S^-$ ) would be  $(\alpha_3 + \alpha_4)$ .<sup>7</sup> For a developed country, the marginal effect of the reporting standard would simply be  $\alpha_3$ . The coefficient  $\alpha_5$  captures whether, on average, the level of equity capital raised per ADR program differs between developing and industrialized countries regardless of the type of program issued. Such a difference, which would arise if developed country firms were on average of larger size, justifies, in part, including the level dummy in the equation specification. Since the paper's main objective is to test the significance of the degree of standards compliance, coefficients on ( $S^-$ ) and ( $D * S^-$ ) will be the main focus. When  $S^-$  is replaced with  $S^+$  the higher standards are tested.

<sup>7</sup> The explanatory power of  $N_{it}$  will be obvious since the average amount raised per program ( $Y_{it}/N_{it}$ ) and the ratio of private to total programs ( $S_{it}^-/N_{it}$ ) could have been used in the specification of equation 1. However, because firms do not issue ADRs every year, the large number of zero ratios of private to total programs coinciding with zero average amounts raised produced a positive relationship between the two variables. A result that is clearly incorrect since from Figure 8, it is clear that the average amount raised is lower for private programs. The sign of the coefficient on  $S_{it}^-$ , which should be negative, is not the main interest of the paper, but rather its size and significance relative to other factors ( $D * S_{it}^-$ ). Also, if individual firm data was used (i.e, Y equal to the actual amount raised by a given ADR program), another equivalent specification of equation 1 would have been

$$Y_{it} = \alpha_1 + \alpha_2 S_{it}^- + \alpha_3 D * S_{it}^- + \alpha_4 D. \quad S_{it}^- \text{ in this case would be a dummy variable taking the value of 1 if the particular issue is a private program and zero otherwise.}$$

The country dummy variable (D) on the variable ( $S^*$ ) controls for factors associated with the stage of economic development of the country of origin of an issuing firm. These factors may be obvious and measurable or unsuspected or difficult to measure. Constraints on the access to international capital markets are more often attributed to developing countries. These include distortionary taxes, capital constraints, differences in corporate governance etc...The paper does not attempt to provide a value judgment on what those factors might be from one country to another. Whatever those factors may be, to the extent that they are common to the stage of economic development of the country, they are captured by the dummy variable (D) on the variable ( $S^*$ ).

To allow for individual country differences which are not related to their stage of economic development (e.g., political and economic systems, cultural differences, investment opportunities, etc.) or to their choice of a level of standards compliance, equation (1) is also estimated using random effects models. This method controls individual country effects by treating them as random. Intuitively, treating country specific effects as random means that if one picks a country from the population of countries, those factors specific to it which cannot be associated with its stage of economic development or choice of reporting standard would be treated as random and included in the error term ( $v_{it}$ ).<sup>8</sup>

## V. EMPIRICAL RESULTS

Table 2 presents the results. Equation 1 is first estimated without the dummy variables. As the results show, privately placed ADRs are associated with lower levels of equity capital raised per ADR program. This result was obvious from the graphical analysis. White and Likelihood Ratio tests of heteroskedasticity on Equation 1 are both significant rejecting the hypothesis of homoskedasticity as is usually expected in Panel Data Analysis.<sup>9</sup> Equations 2 and 3, with and without the dummy variables respectively, are therefore estimated using Feasible Generalized Least Squares estimators to obtain White heteroskedasticity consistent standard errors. Finally, the model specification F-test comparing Equations 2 and 3 is significant, rejecting the model without the dummy

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<sup>8</sup> The random effect model would thus be a mix of fixed (stage of economic development and standard compliance) and random (individual specific) effects. As noted in Mátyás and Sevestre (1996, p. 93), modeling individual specific effects as random rather than fixed effects is appropriate when those specific effects are not the focus of the study. The random effects model is also more appropriate when the sample used is not the entire population (in our case all countries in the world).

<sup>9</sup> The time series data is annual. It is also not continuous in individual countries since firms do not raise equity capital every year. Issues of autocorrelation and stationarity of the time series data were thus not of concern. The equations are estimated in levels.

Table 2. Empirical Results

Coefficients for the Amount of Equity Capital Raised Equations (Y)							
Variables	OLS	FGLS				Random Effects	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
<b>Constant</b>	5.1 (0.46)	-4.3** (-8.27)	-2.4** (-3.5)	-4.3** (8.3)	-4.4 (-1.5)	1.96 (.10)	30.9 (1.3)
<b>N</b>	140.7** (25.8)	128.4** (7.3)	124.6** (20.0)	90.4** (35.7)	89.5** (41.2)	137.5* (22.6)	106.7** (23.1)
<b>D</b>	... ...	... ...	-2.0** (-2.9)	... ...	0.01 (0.003)	4.0 (.14)	-34.1 (-1.3)
<b>S<sup>-</sup></b>	-32.4** (-4.31)	-38.0** (-5.2)	-5.22 (-.46)	... ...	... ...	-7.9 (-.60)	
<b>S<sup>+</sup></b>	... ...	... ...	... ...	38.0** (5.2)	44.1** (2.7)	... ...	22.1* (2.5)
<b>D*S<sup>-</sup></b>	... ...	... ...	-30.2** (3.26)	... ...	... ...	-26.0* (-2.0)	... ...
<b>D*S<sup>+</sup></b>	... ...	... ...	... ...	... ...	3.4 (.17)	... ...	26.5* (2.1)
<b>R<sup>2</sup></b>	.70	.73	.76	.73	.74	.72	.73
<b>White Test</b>							
F test	57.8**						
LM test	167.4**						
LR test	62.7**						
<b>F-test</b>		5.6*		3.3*			

The sample is 1990-1998 with 66 countries for 594 data points from the cross-section time series data.

1/ Numbers in parentheses are T-statistics. \* and \*\* mean significant at the 5% and 1% level respectively.

N = Number of ADR programs from a country's firms

S<sup>-</sup> = Number of private ADR programs from a country's firms

S<sup>+</sup> = Number of public ADR programs from a country's firms

D = Developing country dummy equal to 1, 0 otherwise

D\*S<sup>-</sup> = Number of private ADR programs from a developing country's firms

D\*S<sup>+</sup> = Number of public ADR programs from a developing country's firms

variables. Of the latter two equations, Equation 3 is therefore the preferred model and is discussed below.

In Equation 3, the coefficient on  $(S^-)$  indicates that although developed countries raise less capital when issuing privately placed ADRs, the marginal effect is not significant. In contrast, for developing countries, the coefficient on  $(D*S^-)$  shows that the marginal effect of issuing privately placed ADRs is negative and highly significant. This implies that complying with less stringent reporting standards in itself is not a significant reason for lower equity capital raised. It is the country of origin of the firm issuing private placements that matters.

Complying with stringent reporting standards implies significant recurrent costs and the amount of information revealed is extensive (See Box 1). The result therefore suggests that developing country firms knowing that stringent reporting requirements and associated disclosures would not affect the amount of equity capital raised, prefer private placements. This preference was shown in our earlier graphical analysis. Similarly, international investors either know or would conclude that those firms are signalling without reporting costs that the negative effect of revealing the information in Box 1 would dominate the benefit of compliance with stringent reporting standards. Investors value the issue less and issuing firms save on reporting costs. The behavior of both parties is optimal and imposing compliance with higher reporting standards would be inefficient.

For industrialized countries, the insignificance of the coefficient on  $S^-$  may also suggest that investors may be more familiar with industrialized countries. It could also be argued that homecountry standards of industrialized countries are of enough good quality to significantly mitigate the noncompliance with more stringent U.S standards. A further implication of this mitigating factor is that, at the margin, harmonization of U.S. and other industrialized countries standards may be beneficial.

Equations 4 and 5 show the results of the test on publicly placed ADRs  $(S^+)$ . As expected, Equation 5 indicates that publicly placed ADRs marginally raise more funds. In Equation 5, which contains the dummy variables, the coefficient on  $(S^+)$  indicates that developed country firms issuing publicly placed ADRs raise significantly more funds. In contrast to Equation 3 analyzed earlier, where the reporting standard did not matter, the present result suggests that the public placement variable carries with it additional information besides the disclosure standards being met. Indeed, the extensive information in Box 1 that would be revealed would likely be favorable to justify the reporting costs incurred to reveal the information. The insignificant coefficient on  $(D*S^+)$  indicates that it does not matter whether the issuing firm is from a developing country. When a firm from a developing country issues publicly placed ADRs, the marginal benefits are equally high. If these results are correct, Equation 4 which contains no stage of economic development dummy should be preferred to Equation 5. However, the model specification F-test comparing Equations 4 and 5 is significant, rejecting the model without the dummy variables. There are therefore stage of economic development effects that need to be uncovered more precisely.

As was discussed earlier, the random effects model controls for country specific factors so that the coefficient associated with the stage of economic development factors of the issuing firm's country can be better estimated. Thus, Equation 6 which tests the less stringent reporting standards ( $S^-$ ) shows results similar to those that were obtained in Equation 3. In contrast to Equation 5, Equation 7 which also tests the publicly placed ADRs indicates that, indeed, when country specific factors other than the stage of economic development are isolated, there are differences between developed and developing countries. Both are rewarded for meeting more stringent reporting standards but more so for developing countries. The premium for developed countries is the coefficient on ( $S^+$ ) to which the coefficient on ( $D*S^+$ ) should be added for developing countries. When compared to the results of Equations 3 and 6, these findings imply that developing country firms that determine that the information in Box 1 when disclosed would be beneficial receive a significant premium for the higher standard compliance. Compliance with the stringent standards is cost effective in this case.

We, therefore, infer from these results (Equations 6 and 7) that compliance with listing standards follows a self-selection process and should be voluntary.

Finally, the coefficient on the dummy variable  $D$ , which tests the difference in average amounts raised between developed and developing countries, is only significant in Equation 3. The coefficient is negative and implies that in the private placement ADR market, the stage of economic development of the issuing firm's country itself matters for the average amount of equity raised. It is higher for developed countries. This should not be surprising since industrialized countries have a higher income level by definition. Their firms should therefore on average raise more funds per equity issue, *ceteris paribus*. This conclusion, however, does not carry forward to the publicly placed ADR market. This is also not surprising because developing country firms that issue publicly placed ADRs are usually large exporting firms whose size is not constrained by their domestic economy (Kang and Stulz, 1997).

## VI. CONCLUSION AND FURTHER ISSUES

The paper analyzed the importance of reporting and disclosure standards for amounts of equity capital raised in international capital markets. The ADR market provided an excellent laboratory type setting to analyze these issues. This is because ADRs differ in type only by the degree of reporting and disclosure standards with which issuing firms are required to comply. Since both developing and industrialized country firms issue the different types of ADRs, the data also allowed to uncover differences due to stages of economic development.

The main finding of the paper is that compliance with securities listing standards may not be cost efficient and, as such, should be voluntary. Market incentives, in terms of the amount of equity capital raised by firms from developing countries, show that factors other than compliance with listing standards may explain the lower amounts of equity capital



raised. This justifies the choice to meet less stringent standards to avoid the associated reporting costs. In contrast, when firms from developing countries choose to comply with stringent standards, a significant premium usually comes with the compliance. The premium is on account of both the higher standard compliance and the fact that it is a developing country firm disclosing favorable information.

These results imply that a cost effective strategy of listing standards implementation for developing countries would be to let them decide when implementation is warranted. Forcing implementation through official incentives would also not be cost effective. This is because private sector investors already internalize in their market incentives the information that would have been disclosed if higher reporting standards were met. That information is conveyed without reporting costs by the type of ADR placement chosen by the better informed issuing firm.

In the case of developed country firms, results show that there is an incentive for the U.S. and other industrialized countries to harmonize their reporting and disclosure standards. This result followed from the finding that industrialized country firms that complied with their homecountry standards (though heterogeneous) did not raise less funds because of it. By imposing too stringent standards, the U.S. may lead firms to list their securities in other financial centers.

Industrialized countries' interest in this harmonization has recently been confirmed with the U.S. accepting to set up an accounting standards committee to establish international accounting standards that would be accepted in both the United States and Europe (Norris, March 2000). Also, the European Commission has recently outlined a strategy aimed at establishing common reporting and accounting standards for listing companies in the European Union (EC, 2000).

If the above results are generalized, it seems that agreements on standards obey the same rule followed by trade agreements in that it is easier to agree among trade groups before attempting to reach inter group agreements. Indeed, ensuring implementation of standards without coercive measures and moral suasion requires consensus and in many instances, this consensus may initially be plural.

The dilemma facing the international community regarding international standards implementation in general is similar to the optimum currency area dilemma in that two regions in a country may be under the same exchange rate regime but the regime is only optimal for one region. In the case of the standards, the exchange rate regime would be the implementation of international standards without differentiating between country circumstances. As the FSF (2000) notes "prioritization of standards implementation must necessarily vary from economy to economy, taking into consideration their status in observance of standards, economic circumstances, financial structures, legal and institutional frameworks, and policy priorities. A balance would need to be struck between international and domestic considerations". In the case of securities listing standards for which IOSCO is

developing international standards, our results indicate that cost effectiveness considerations suggest that implementation be voluntary.

## REFERENCES

- Chuhan, Punam, and Nlandu Mamingi, 1998, "Equity and bond flows to Latin American and Asia: the role of global and country factors," *Journal of Development Economics* V. 55, pp. 439-63.
- European Commission (EC), 2000, "Communication from the Commission to the European Parliament and the Council: European Financial Reporting Strategy: The Way Forward," (March 13) COM(2000): 359.
- Financial Sector Forum (FSF), 2000, "Issues Paper of the Task Force on Implementation of Standards," (March), <http://www.fsforum.org/Reports/RepIOS.html>
- Joyle, Richard J., 1995, ed. "The McGraw-Hill Handbook of American Depository Receipts," McGraw-Hill, Inc.
- Kang, Jun-Koo, and Rene M. Stulz, 1997, "Why is there a home bias? An analysis of foreign portfolio equity ownership in Japan," *Journal of Financial Economics* V.46, pp 3-28.
- László Mátyás, and Patrick Sevestre, 1996, "The Econometrics of Panel Data" A Handbook of the Theory with Applications.
- Liang, Youguo, and Mbodja Mougoue, 1996, "The pricing of Foreign Exchange Risk: Evidence form ADRs," *International Review of Economics and Finance* V.5(4): pp. 377-85.
- Lieberman, Ira W., and D. Christopher, eds., 1998, "Privatization and emerging markets," World Bank.
- Miller, Darius P., 1999, "The market reaction to international cross-listings: Evidence from Depository Receipts," *Journal of Financial Economics*, V.51 n1, pp. 103-23.
- Min, Hong G., 1998, "Determinants of emerging market bond spread: do economic fundamentals matter," World Bank, Development Research Group. Policy Research Working Paper 1899.
- Norris, Floyd, 2000, "Accounting Standards Committee Named," *New York Times*, March 23.